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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,033	09/25/2001	Yu Wong	06618-201002	3226

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06/05/2002

SCOTT C. HARRIS
Fish & Richardson P.C.
Suite 500
4350 La Jolla Village Drive
San Diego, CA 92122

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FISH & RICHARDSON, P.C.
SAN DIEGO

EXAMINER

CURTIS, CRAIG

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.
09/965,033

Applicant(s)
WONG

Examiner
Craig Curtis

Art Unit
2872



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 26, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above, claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Election/Restriction

I. Applicant's election without traverse of Group I (claims 1-10) in Paper No. 3 is hereby acknowledged. In accordance with 37 CFR 1.142(b), therefore, Claims 11-16, associated with Group II, are hereby withdrawn from further consideration by the examiner, as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Simon et al. (5,451,980).

Simon et al. discloses (see Fig. 6) the invention as claimed--a device, comprising an array of light-filtering channels (channels formed penultimately (from left to right in Fig. 6) by transparent electrodes 90) having an input surface (80) from which said light-filtering channels receive input light and an output

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surface (l.h.s. of 92) from which said light-filtering channels export output light, wherein each light-filtering channel comprises:

a light-conducting channel formed of a transparent dielectric material having a first surface which is substantially reflective (80: see col. 10, ll. 34-36) and a second surface (l.h.s. of 92: see col. 10, ll. 57-59) opposing said first surface, said first and second surfaces substantially parallel to said light-conducting channel (see Fig. 6); and

at least two optical filters sequentially formed on said second surface along said light-conducting channel (Again, viewing said light-filtering channels as comprising elements between 80 and 94) to reflect said input light between said first and second surfaces so that said input light is sequentially reflected and filtered by said optical filters to produce said output light (see Fig. 6), wherein each optical filter includes at least one metal layer (82, 86) and an electro-optical dielectric layer (84) contacting with each other (see col. 8, ll. 56-65; Fig. 6) to form a metal-dielectric interface which generates a surface plasmon wave in response to a p-polarized input light beam to transmit light at a selected wavelength within a bandwidth according to a control voltage from said metal layer to said dielectric layer and reflects light of other wavelengths (see col. 7, ll. 8-12); and

at least two thin-film transistors (see col. 10, ll. 50-59) respectively formed on said optical filters to provide said control voltage to control a refractive index of said dielectric layer and thereby said selected wavelength to change a color and a grey scale of said output light (in an analogous fashion to that set forth in col. 13, ll. 4-13);

wherein said dielectric layer includes a liquid crystal material (see col. 13, ll. 4-7);

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further comprising a screen (94) positioned relative to said output surface to receive said output light from said light-filtering channels to form an image;

wherein said input surface is substantially parallel to said output surface (see Fig. 6), and wherein said input and output surfaces each form an angle with respect to said first and second surfaces in each light-filtering channel (to the extent that no two surfaces are absolutely parallel with respect to one another);

further comprising a polarization element that receives and transmits input light to said input surface (80);

a plurality of transparent plates (see Fig. 6), each having a filtering surface and an opposing reflecting surface,

a metallic layer formed over said filtering surface of each transparent plate (see Fig. 6);

an electro-optical dielectric layer, whose refractive index changes in response to a control voltage disposed in contact with said metallic layer to form a metal-dielectric interface which generates a surface plasmon wave in response to a p-polarized input light beam to transmit light through said metallic layer at a selected wavelength within a bandwidth according to a local refractive index of said electro-optical dielectric layer at each location of said metallic layer where light is reflected and to reflect light of other wavelengths back to each transparent plate (in an analogous fashion to that set forth in col. 13, ll. 4-13);
and

a plurality of parallel linear arrays of transistors formed over said dielectric layer, wherein said transistors are independent from one another, and where each parallel linear array of transistors defines

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a light channel along which light is reflected between said filtering and said reflecting surfaces to modify a color and an intensity of said light according to voltages from said transistors in each linear array relative to a common voltage of said metallic layer (as set forth above),

wherein said transparent plates are stacked over on another so that a reflecting surface of one transparent plate faces a filtering surface of an adjacent transparent plate to form a two-dimensional array of light channels (see Fig. 6);


further comprising a first intermediate metallic layer (86) in contact with said electro-optical material layer and a first electro-optical material layer switched between said first intermediate metallic layer and said plurality of parallel linear arrays of transistors (see Fig. 6).

Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (703) 305-0776. The facsimile phone number for Art Unit 2872 is (703) 308-7721.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.


Craig H. Curtis
Group Art Unit 2872
31 MAY 2002


Cassandra Spyrou
Supervisory Patent Examiner
Technology Center 2800